

ABSTRACT**DEVICE AND METHOD FOR PRODUCING RADIOISOTOPES**

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The present invention is related to a device and a method for producing a radioisotope of interest from a target fluid irradiated with a beam of accelerated charged particles, said device comprising in a circulation
10 circuit (17):

- an irradiation cell (1) comprising a metallic insert (2) able to form a cavity (8) designed to house the target fluid and closed by an irradiation window (7), said cavity (8) comprising at least one
15 inlet (4) and at least one outlet (5);
- a pump (16) for circulating the target fluid inside the circulation circuit (17);
- an external heat exchanger (15);

said pump (16) and said external heat exchanger (15) forming external cooling means of said target fluid;
20 said device being characterized in that it further comprises pressurizing means (14) of said circulation circuit (17) and the external cooling means of said target fluid are arranged in such a way that the target fluid
25 remains inside the cavity (8) essentially in the liquid state during the irradiation.

(Figure 1)